

**SITUATION REPORT NO. 1**  
**INCIDENT NO. 2001- 005**  
**DATE: March 2, 2001      TIME: 12:00 p.m.**

**TO:** Governor John Hoeven  
State Capitol  
Bismarck, N.D. 58505

1. NATURE OF DISASTER: Spring Flood Potential -- Above normal fall precipitation and a high soil moisture content, compounded by eight years of prior flooding, has resulted in a strong probability for Devils Lake to continue its historic rise. Forecasters expect the Red River of the North to rise several feet above flood stage at gauging locations. Additionally, hydrologists for the National Weather Service (NWS) expect moderate to major spring flooding to occur in the Souris River Basin, and along the Pembina River.
2. DEATHS AND INJURIES: No deaths or injuries have been reported.
3. DAMAGES: Recent National Weather Service (NWS) Long-Range Probabilistic Outlooks calling for Devils Lake to continue its historic rise reflect the use of a new forecasting system, Advanced Hydrologic Prediction Services (AHPS). NWS meteorologists have indicated that this new system will provide improved forecasts for rivers and lakes during times of floods and droughts. The system incorporates expanded use of climate prediction, radar data, gauge readings and reservoir releases. NWS officials feel the system provides a more accurate method for determining snow cover and snowmelt, as well as subsoil water movement. The outlook contains numbers that are calculated using multiple spring-summer season scenarios for 49 years, from 1949 to 1997, of climatological data. These numbers also take into account current conditions of the lake, snow cover and soil moisture, as well as the long-range outlook for temperatures and precipitation.

The latest outlook, available on the web at [www.crh.noaa.gov/fgf](http://www.crh.noaa.gov/fgf), was issued by the Grand Forks Office of the NWS on February 21st, indicates that a 50 percent chance exists for Devils Lake to exceed an elevation of 1,449.2 feet when it peaks in mid-July. If it reaches that level, the lake will be nearly two feet above its historic high set in 1999 and three feet above its present level. During this past fall, abnormally high levels of rain fell throughout the Devils Lake Basin, resulting in a very high soil moisture content. By February 20, snow depths across the basin ranged from 12 to 18 inches with water equivalents measuring from two to three inches.

The Red River of the North has a 70 percent probability of exceeding the 40-foot moderate flood stage in Grand Forks, based on the 90-day Long-Range Probabilistic Outlook issued February 23 by the Grand Forks office of the NWS. Near that level, water could start to inundate agricultural land and flow over roads near the river. Upstream, there is a 45 percent chance for rising above the 12-foot moderate flood stage in Wahpeton. At 11 feet, the city mobilizes its dike patrols. In Fargo, a 60 percent chance exists for the river to rise above the 27-foot moderate flood stage. At that level, water could begin flowing over roads and widespread flooding could occur in and recreational areas along the river as it becomes bankfull. Downstream, there is an approximately 78 percent chance for the river to rise above the 38-foot moderate flood stage at Drayton. At 32 feet, water overflows the approach to west end of the bridge in Drayton. The outlook also places the chance for the river rising above the 47-foot moderate flood stage at Pembina at 78 percent.

As in other areas of North Dakota, late fall rains across the Red River basin resulted in high soil moisture content before freeze up. Snowfall to date has been above normal, but is only half of the amount that fell during record levels of 1996-97. By mid-February, snow depths ranged from one foot to two feet; water equivalent in the snow pack amounted to two to four inches. Although below flood stage, hydrologists report that flows on most rivers in the basin are near record for this time of year.

A Spring Flood Outlook, issued February 23 by the Bismarck office of the NWS, indicated moderate to major flooding may occur this spring along the Souris River, from Towner to Westhope. The potential for minor to moderate flooding exists for locations upstream of Towner. For other rivers within western and central North Dakota, hydrologists expect that no flooding will occur in the Missouri River basin and only minor flooding in the lower James River basin. Hydrologists report that winter began with an unusually cold December with limited precipitation levels. The following month, precipitation was normal and temperatures were warmer, contributing to a decrease in snow pack. Throughout the area, snow cover varies in depth from 20 to 25 inches in east central and two to four inches in the central and southwest. Snow water equivalents range from one to 2.5 inches in the James River basin, and one inch or less for the Missouri River basin. In the Souris River basin, water equivalents amount to as high as four inches in southeast Saskatchewan and one to three inches in North Dakota. Additionally, soil moisture is above normal for all of western and central North Dakota as a result of a wet fall.

NWS forecasters caution that above normal precipitation and a rapid snowmelt could increase the flood potential during the upcoming weeks. Likewise, the flood potential decreases if below normal precipitation, a gradual thaw or intermittent freezing and thawing occur.

4. RESOURCES:

LOCAL: Local agencies monitoring the spring flood potential include: public works departments, law enforcement agencies, communications centers, emergency management offices, fire and rescue, ambulance services, city and county commissions, administrative offices and planning councils.

STATE: Appropriate state agencies are also monitoring conditions.

FEDERAL: The National Weather Service and the Federal Emergency Management Agency (FEMA) are also monitoring conditions.

5. VOLUNTEER ACTION: Thirty Devils Lake families were referred by Lake Region Human Services to Resource Agencies Flood Team (RAFT) for assistance. RAFT is a consortium of volunteer agencies including Catholic Family Services, Lutheran Disaster Response, The Salvation Army, United Church of Christ, United Methodist Committee on Relief and Community Action.

6. MAJOR ACTIONS: The St. Paul District Army Corps of Engineers (COE), in conjunction with the North Dakota and Minnesota Divisions of Emergency Management, recently conducted Flood Preparedness Seminars for the Red River Valley. Participants discussed spring snowmelt and the potential for overland and localized flooding. They also reviewed necessary steps for receiving assistance.

The first Devils Lake State Flood Coordination Center (SFCC) for the year 2001 was held February 21. Following is a summary of the meeting:

### **North Dakota Emergency Management**

In preparation for a flood potential, North Dakota Emergency Management, at the request of Governor John Hoeven, has scheduled a Spring Flood Preparedness and Coordination meeting on March 13, 2001. During the briefing, the NWS will provide its current Spring Flood Outlook information and state agencies will review and discuss the implications of that information as it pertains to task and functional coordinator flood responsibilities within the State Emergency Operations Plan.

### **U.S. Army Corps of Engineers**

The St. Paul District of the COE is preparing a report on potential emergency assistance for the Lakewood area. The report addresses the threat to the Ramsey County Rural Utilities (RCRU) from high lake levels due to this spring's snowmelt. The COE is discussing the current status with Ramsey County officials. A final report will be sent to North Dakota Emergency Management.

COE staff members are prepared to respond to emergency assistance requests from the state to support counties and communities in the Devils Lake Basin. Assistance will be provided to protect urban eligible public facilities and utilities.

The St. Paul District continues work on the preconstruction/engineering and design for a Devils Lake outlet. Environmental impact studies are continuing. Public meetings on the study are scheduled for early April.

### **N.D. State Water Commission**

#### Hydrologic Update for Devils Lake and Stump Lake:

Engineers for the State Water Commission estimate approximately 115,000 acre feet of water could flow from Devils Lake to Stump Lake by the end of the year if Devils Lake reaches the National Weather Service's 50 percent prediction of 1,449.2 feet. Stump Lake would rise by over 13 feet to approximately 1,423.5 feet, inundating approximately 1,600 acres of land around the lake. This estimate does not take into account any of the local inflow into the lake; it only estimates the flow from Devils Lake based on the predicted peak of 1,449.2 feet and assumes the roads across the channel between Devils Lake and Stump Lake do not cause significant head loss.

If Devils Lake rises to 1,449.2 feet this summer, the volume increase would be similar to that which occurred in 1997 when approximately 463,000 acre feet of water flowed into Devils Lake and the lake peaked at 1,442.97 feet. If Devils Lake rises this year to 1,449.2 feet, approximately 22,000 additional acres would be flooded, which is approximately 15,500 acres more than in 1999 when the lake peaked at 1447.1 feet. Because of water flowing to Stump Lake, SWC engineers estimate Devils Lake will drop approximately 0.4 feet from its peak by the end of the year, representing a 55,000 acre-foot decrease. The Water Commission estimates are based on conditions similar to the average from 1993-2000 time period and the Weather Service forecast. Wetter or drier conditions than these will result in very different lake levels.

Following is a summary of current conditions for Devils Lake and Stump Lake:

Devils Lake elevation as of 2/14/01 - 1446.1 (frozen in)

Area of lake	-	118,000 acres
Volume of lake	-	2.32 million acre feet

Stump Lake elevation as of 02/14/01 - 1409.8 (frozen in)

Area of lake	-	7,574 acres
Volume of lake	-	108,650 acre feet

#### Snow Samples:

On January 17, the State Water Commission (SWC) collected 22 snow depth and water equivalence samples at 19 different locations throughout the basin.

The average snow depth was between 7.5 to 10 inches, depending on the location of the sample, and between two to three inches of water equivalence in the snow. Compared to previous years, these numbers appear to be average for this time of year. However, fall soil moisture content was about 160 to 180 percent of normal, which could result in higher than average runoff volumes. The SWC is planning to conduct another snow survey during the week of February 26.

#### Twin Lakes Temporary Emergency Outlet Project:

The SWC continues planning work for a temporary emergency outlet through the Twin Lakes area and is also looking at other alternative locations for the project.

#### Stump Lake Project:

The Director of the Water Development Division for the SWC attended a meeting in Denver on February 14 to discuss the 404 permitting process with the COE, the Environmental Protection Agency and the U.S. Fish and Wildlife Service. The SWC is appealing the COE proposed alternative, which was included in the decision document the federal agency completed for the Stump Lake 404 permit. SWC staff members are waiting on a decision from the COE, which will assist them in determining what the state will pursue in regard to the Stump Lake project.

#### Legislative Water Commission Bill Introduction:

Senate Bill 1151, a bill related to the design and possible construction of a Devils Lake outlet, was amended and passed the House of Representatives and is now in a Senate committee, where it is awaiting a public hearing and a final decision. The bill would remove a requirement for federal agreement to spend state funds for a Devils Lake outlet. The bill introduces a "quick take" option for an outlet. This option, which allows more immediate rights to land, is similar to the one used for the Southwest Pipeline Project (SWPP) and Northwest Area Water Supply (NAWS).

#### Meeting with the COE:

Staff from the SWC met on February 21 with COE representatives to discuss the Upper Basin Storage study and the basin model as part of the federal agency's ongoing environmental impact study (EIS) for a proposed Devils Lake outlet. An EIS scoping meeting will be held the first week in April in selected cities along the Sheyenne and the Red Rivers.

#### National Flood Insurance Program (NFIP):

Devils Lake area political entities are presently contemplating enactment of a land use ordinance that would limit future development around the Devils

Lake/Stump Lake system in an area known as the Area of Special Consideration (ASC). Those entities include: Ramsey County, Benson County, Nelson County, Towner County, Devils Lake, Minnewaukan, Churchs Ferry, Spirit Lake Tribe and Creel Township. The ASC is an area below 1,460 feet, which would be flooded by the Devils Lake system before it would spill from Stump Lake into the Sheyenne River. Adoption of this land use ordinance by these entities is requested by the National Flood Insurance Program (NFIP) in order to maintain eligibility for the unique flood insurance closed lake basin endorsement feature. The endorsement allows for relocation of flood insured structures where "imminently threatened" by the rising waters of a closed basin Devils Lake. The NFIP has asked that this special ordinance be enacted to limit further development, which would be at risk from a rising closed basin lake.

This ASC land use ordinance is requested in addition to 100-year floodplain ordinances recently adopted by these same political entities in December 2000 and January 2001.

#### Devils Lake Risk Assessment:

State and FEMA officials are working out details to provide training to appropriate officials for utilization of Devils Lake area flood risk assessment information. The risk assessment, conducted by FEMA and the State of North Dakota, will assist flood planning, mitigation and preparedness efforts for the Spirit Lake Tribe and in Ramsey, Benson, Nelson, Towner and Eddy counties. This risk assessment identifies infrastructure and residential structures by elevation in one-foot increments. Technology used to gather information included Light Detection and Ranging (LIDAR).

### **N.D. Department of Health**

The N.D. Department of Health will continue its water quality program for 2001 to include eight sites through the Devils Lake chain of lakes. A complete chemical analysis will be done at each site four to six times during 2001.

The Department of Health is cooperating with Devils Lake Joint Water Resource Board on a water quality assessment in the Devils Lake Basin.

### **Devils Lake Basin Joint Water Resource Board**

The Devils Lake Basin Joint Water Resource Board was scheduled to host a Stump Lake Public Meeting on February 22, 2001, for area residents. Scheduled presenters included: the NWS, U.S. Geological Survey, State DOT, FHWA, State Water Commission, North Dakota Emergency Management, FEMA, EPA, N.D. Department of Health, Bureau of Reclamation, Natural Resource Conservation Service (NRCS), N.D. Game and Fish Department and the U.S. Fish and Wildlife Service.

## **City of Minnewaukan**

If Devils Lake exceeds 1,449.2 feet this summer, officials for the city of Minnewaukan expect problems with the city's drainage system. They are concerned that a higher lake level will cause runoff to back up and possibly overflow the drainage system.

Minnewaukan officials indicate that approximately 90 percent of the city's homeowners have flood insurance. A total of 128 NFIP policies are in place, representing \$15,800,000 in coverage.

Work to repair the city's sewer and waste water system is nearing completion. The hydrostatic pressure of Devils Lake raised the water table in the city, damaging the system, as well as streets. The project is funded through 1999 Public Assistance funds.

## **Ramsey County Rural Utilities**

Ramsey County Rural Utilities (RCRU) is continuing to pursue funding to install a new waterline along N.D. Highway 19 across Six Mile Bay. The current waterline is under approximately 16 feet of fill due to a previous grade raise and will become inaccessible as a result of another grade raise scheduled for this year. The project will allow for future maintenance of the waterline even at the highest projected lake elevation and ensure continued service to residences west of Six Mile Bay.

The utility is also working with the COE to develop a project to ensure continued sewer service to approximately 75 homes in the Lakewood area. Several manholes used to provide service to the homes are near 1,448 feet in elevation and could become inundated by the lake this spring. Inundation of the manholes could overload the system with lake water, resulting in the line being shut down.

Work will also be completed this summer to reroute waterlines in the Lakewood area. The work will allow continuation of water service to homes near the lake while abandoning lines that currently lie under several feet of water.

RCRU staff members are also continuing to work on an expansion project that will bring much needed rural water to residences within Ramsey, Eddy and Foster Counties and the communities of McHenry, Glenfield and Grace City. The expansion project could be beneficial to individuals who relocated due to Devils Lake flooding and would like to have rural water.

## **Highway Patrol**

With a projected lake level of 1,448.3 feet, the Highway Patrol anticipates that U.S. Highway 281, just north of Minnewaukan, could be closed at times because

of high winds causing wave action over the roadway. At that same level, N.D. Highway 57, from Ski Jump Hill to Ft. Totten, may also be closed because of high winds.

Currently N.D. Highway 57 has an elevation of 1,448.5 feet and was designated as the detour route when bridge and grade raise work takes place this summer on N.D. Highway 19.

In preparation for the closure of N.D. Highway 19, the Highway Patrol has designated the gravel road from Penn on U.S. Highway 2 to N.D. Highway 19 as the official designated route for those people traveling to Grahams Island State Park.

With the projected closure of Shelters Grove State Park, the Highway Patrol anticipates increased pressure on Grahams Island Park. These two parks had 94,000 visitors in 1999. The District Commander will provide patrol enforcement on the designated alternate routes (gravel roads). Troopers expect to see an increase in crashes and incidents (broken windshields) and complaints involving roadway maintenance and high speeds on gravel designated alternate routes.

N.D. Highway 20 at the Narrows will also be closed for roadway and bridge grade raises. Bureau of Indian Affairs (BIA) alternate routes have been designated. Troopers also anticipate the same problems with these BIA routes as they do on the Penn gravel route. However, the District Commander will not be providing active patrols on the BIA alternate routes.

#### **N.D. Department of Transportation, Devils Lake District**

Bids were received in the fall of 1999 for a special contract to perform emergency riprap repairs on all the area lake crossings if high winds cause erosion, damage to riprap, or heavy debris deposition. The contractor on this project will be required to react on very short notice to make necessary emergency repairs. Approximately \$15,500 in damages that occurred during a windstorm were recently repaired under this contract. This project has been extended.

The N.D. Department of Transportation (DOT) has plans ready and is in the process of buying right-of-way to relocate N.D. Highway 1 at Stump Lake. This project is set for a May bid opening. This project will be closed to traffic once the water is endangering the road. A detour route has been worked out with the county (county roads 35 and 4). District staff attended a Nelson County Commission meeting and briefed commissioners on the status.

The Federal Highway Administration (FHWA) Task Force requested a waiver in emergency relief regulations that would allow DOT to be more proactive in dealing with road problems caused by Devils Lake flooding. The waiver would allow the DOT to raise the roads if they were within three feet of inundation. The



DOT has worked with the FHWA to determine which roads are eligible. Additional money has been obligated and projects are being prepared.

The grade raises on N.D. Highway 20 at Mission Bay and Black Tiger Bay were completed and paved. The elevation of these sites is approximately 1,451.8 feet. These roads, as well as other locations, are acting as dikes and can't be raised again until the waiver issue has been resolved.

### **N.D. Parks and Recreation Department, Devils Lake State Parks**

#### Shelvers Grove :

Wave action on windy days on Devils Lake, at an elevation of 1,447 feet, could cause erosion to the campground entrance road. A rise above 1,448 feet will limit access to the campground and short sections of the campground road, requiring park closure for periods of time.

#### Grahams Island:

At Grahams Island State Park, an elevation of 1,448 feet or higher will cause some flood damages to campsites in the original campground. Many of the campsites will become too wet for vehicle use. The higher lake level may also flood the lift station for Loop A comfort station. The park is currently experiencing some ground water infiltration; higher lake levels may increase the flows. Access to the park via Grahams Island Road also becomes questionable at the anticipated levels.

The anticipated closure of N.D. Highway 19 will also negatively impact park visitation this summer.

#### Black Tiger Bay:

The facility will be operational in 2001 up to a lake level of approximately 1448.5 feet. This area has adequate riprap protection to prevent erosion damage up to 1448.5 msl. No major flooding problems should be experienced this summer with the current lake level forecast.

### **Lake Region Human Services**

The Disaster Outreach Program (crisis counseling) ended December 9, 2000. The program had been funded through a Regular Services Grant received by the Mental Health and Substance Abuse Services of the N.D. Department of Human Services. FEMA funded the grant, which was administered on a national level by the Center for Mental Health Services (CMHS) of the U.S. Department of Health and Human Services. CMHS and FEMA granted a three-month extension for the program. When the funding ended on December 9, the program's seven staff

members were laid off. Also around the same time, the HandS (Helping and Supporting Hands) Interfaith Coalition disbanded, with discussion of the possibility of forming a new group if urgent needs arose.

### **N.D. Game and Fish Department**

#### **Devils Lake Boat Access**

If Devils Lake rises to 1,449.2 feet, most Game and Fish Department boat access points on Devils Lake will require some work. The boat ramps at East Bay, Minnewaukan and Black Tiger Bay will likely require the most work and expense. The Creel Bay ramp can be easily extended to a higher elevation.

### **N.D. National Guard**

Workers have completed the Avenue A shoreline riprap project at Camp Gilbert C. Grafton. The project was designed to protect the flood-threatened roadway and utilities. Riprap was placed to an elevation of 1,460 feet.

### **City of Devils Lake**

In preparation for additional increases in Devils Lake, officials for the city of Devils Lake will be monitoring several issues to include ensuring storm water lift stations - all stations will be ready and available during the spring snowmelt.

Results of city well monitoring tests indicate that the ground water level is high and absorption of runoff water will be minimal at present time.

Concerns include the potential for increased hydrostatic pressure within the city as the lake rises.

### **Nelson County Highway Department**

Ramsey and Nelson counties will receive will receive \$640,000 in federal emergency relief money for the bridge project on County Road 27. Bids will be let in May 2001.

### **Nelson County Emergency Management**

Throughout winter, Nelson County residents have reported problems related to mold growth in basements. The Emergency Manager distributed clean-up kits and may be receiving additional kits. A Central Township farm family moved from their home because of mold problems.

A Bergan Township home sustained structural damage caused by a rising water table and a slough that is expanding in size.

A Williams Township resident has been experiencing well problems.

Many Nelson County homeowners have been running sump pumps continuously throughout winter.

The Nelson County Housing Rehabilitation Committee has been working with the Red River Planning Council on plans to construct five homes. The council has been administering a disaster rehabilitation housing project in Nelson and Pembina counties.

Nelson County officials are reviewing the ordinance that would limit future development around the Devils Lake/Stump Lake system in an area known as the Area of Special Consideration (ASC).

City of Lakota officials are concerned that additional soil and water will compromise the integrity of a water line that runs adjacent to N.D. Highway 1. The pipe could be threatened at its joints.

### **Benson County Emergency Management**

If Devils Lake continues its historic rise, Benson County officials are concerned that floodwaters will cause problems, particularly on windy days, for Grahams Island Road and the Woods-Rutten roads, both of which are at an elevation of 1,450 feet.

### **Ramsey County Highway Department**

Ramsey County Highway 2 will be affected by floodwaters if Devils Lake rises to 1,449.2 feet. The road elevation is 1,449 feet.

### **Ramsey County Emergency Management**

Ramsey County officials pointed out that extensive road building and bridge work in the Lake Region will cause delays for emergency service vehicles and for other travelers. Construction plans will also limit access to the area's state parks. Because access to the Devils Lake area will be difficult, businesses will likely suffer economic losses.

Several roads in the Devils Lake area, including N.D. Highway 20 south of Acorn Ridge, are holding back lake waters. However, because they were not designed as dikes, officials are concerned.

If Devils Lake rises to 1,449.2 feet, floodwaters will threaten the east and west sides of Creel Bay and two Six Mile Bay subdivisions, Six-Mile Heights and Sunny Hills.

The Ramsey County Emergency Manager recently met with COE officials to discuss emergency protection measures for the RCRU infrastructure and Lakewood Subdivision homes.

Roads, homes and structures near the lake will be threatened by floodwaters if Devils Lake reached the NWS 90 percent prediction of 1,448.3 feet. If the lake rises to 1,449.2 feet, floodwaters would be within one-half foot of the city's lake level protection system. Area roads that would be threatened would include the Woods-Rutten and Grahams Island roads, both of which were built to 1,450.5 feet.

Many residents have been running their sump pumps continuously this winter because of high ground water tables.

### **N.D. Insurance Department**

As a result of recent discussions with North Dakota Emergency Management, the Commissioner of Insurance, Jim Poolman, is preparing to release an announcement early next week. The announcement will focus on encouraging property owners across the state to conduct a risk assessment and a review of their insurance coverages in general, with special attention to the potential for flooding and the need to purchase flood insurance in a timely basis (30 day wait). In conjunction with this announcement, a special segment on flood mitigation for insurance will be available in the Department web site: <http://www.state.nd.us/ndins/>. There are also links to Prairie Public Broadcasting RiverWatch, FEMA and NFIP.

### **North Central Planning Council**

North Central Planning Council (NCPC) is currently conducting the Hazard Mitigation Grant Program (HMGP) acquisition project for the city of Churchs Ferry.

NCPC is assisting the BTR Elevator Company in its efforts to relocate its facilities in Churchs Ferry.

NCPC has committed \$90,000 of Community Development Block Grant (CDBG) funds for the local match for the city of Minnewaukan's city renovation of their water and sewer lines.

NCPC continues to administer matching funds for the City of Devils Lake's levee system.

NCPC also is working with the City of Devils Lake Mayor's Business Committee to find ways for the community to recover from seven years of continuous disastrous conditions to include closed roads and a struggling farm economy.

The Committee has completed an economic damage assessment, written an economic recovery and revitalization plan and is currently working on a housing survey and assessment.

### **Federal Emergency Management Agency (FEMA)**

Officials for FEMA, Region VIII, are reviewing concerns expressed by Devils Lake area communities in regard to a NFIP land use ordinance that would limit development around the Devils Lake/Stump Lake.

7. ASSISTANCE NEEDED: With the exception of ongoing technical assistance, no additional requests have been received.
8. OUTSIDE HELP ON SCENE: No additional resources are on scene at this time.
9. OTHER: Situation Reports published by North Dakota Emergency Management are posted on the Division's Internet home page. The address is <http://www.state.nd.us/dem>.

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Douglas C. Friez, State Director